ABSTRACT

The present invention includes an improvement to the existing method of steam reforming of hydrocarbon, wherein the improvement comprises: the flowing is at a rate providing a residence time less than about 0.1 sec resulting in obtaining product formation yield or amount that is the same or greater compared to product formation at a longer residence time. Another improvement of the present invention is operation at a steam to carbon ratio that is substantially stoichiometric and maintaining activity of the supported catalyst. The present invention also includes a catalyst structure for steam reforming of a hydrocarbon.